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Review

Radiofrequency and Extremely Low-Frequency Electromagnetic Field Effects on the Blood-Brain Barrier

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Abstract

During the last century, mankind has introduced electricity and during the very last decades, the microwaves of the modern communication society have spread a totally new entity—the radiofrequency fields—around the world. How does this affect biology on Earth? The mammalian brain is protected by the blood-brain barrier, which prevents harmful substances from reaching the brain tissue. There is evidence that exposure to

electromagnetic fields at non thermal levels disrupts this barrier. In this review, the scientific findings in this field are presented. The result is a complex picture, where some studies show effects on the blood-brain barrier, whereas others do not. Possible mechanisms for the interactions between electromagnetic fields and the living organisms are discussed. Demonstrated effects on the blood-brain barrier, as well as a series of other effects upon biology, have caused societal anxiety. Continued research is needed to come to an understanding of how these possible effects can be neutralized, or at least reduced. Furthermore, it should be kept in mind that proven effects on biology also should have positive potentials, e.g., for medical use.

Keywords: Albumin Blood-brain barrier Mobile phones MRI

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